United Nations A/72/160

General Assembly

Distr.: General
17 July 2017

Original: English

Seventy-second session
Agenda item 20 (i) of the provisional agenda*
Sustainable development

Ensuring access to affordable, reliable, sustainable and modern energy for all

Report of the Secretary-General

Summary

In the present report, the Secretary-General provides an overview of the progress made towards ensuring access to affordable, reliable, sustainable and modern energy for all and highlights activities undertaken by a wide range of stakeholders to accelerate the achievement of that objective, including action by Member States and efforts by the United Nations system and international organizations. Submitted pursuant to General Assembly resolution 71/233, the report describes possible ways to strengthen both intergovernmental and inter-agency coordination and institutional support on energy issues in the context of the 2030 Agenda for Sustainable Development, including in support of the first global review of Goal 7 of the Sustainable Development Goals leading up to the high-level political forum on sustainable development to be held in 2018.

* A/72/150.

17-12028 (E) 070817

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I. Introduction

1. The present report is submitted pursuant to General Assembly resolution 71/233, in which the Assembly requested the Secretary-General to submit a report on the implementation of the resolution at its seventy-second session and, within existing resources, to make concrete proposals on the strengthening, through existing arrangements, of both inter-agency and intergovernmental coordination and institutional support on energy issues, and to give appropriate consideration to progress on sustainable energy in the context of the 2030 Agenda for Sustainable Development.

II. Energy in the 2030 Agenda for Sustainable Development

2. In September 2015, in its resolution 70/1, the General Assembly adopted a new, groundbreaking agenda to guide development efforts during the period 2015-2030. The 2030 Agenda for Sustainable Development sets out 17 Sustainable Development Goals and 169 targets, which jointly constitute a comprehensive plan of action to eradicate poverty and ensure sustainable development.

3. The Sustainable Development Goals are comprehensive, universal and interlinked and cut across all dimensions of sustainable development. They need to be pursued according to national priorities, needs, institutional structures and the financing mix available in each unique circumstance. Integrated planning, strategic thinking, policy integration and multi-stakeholder action will be crucial if countries are to be able to deliver on the Goals on the ground.

4. Under the 2030 Agenda, in recognition of the importance of energy for sustainable development, Sustainable Development Goal 7 was established as the first-ever universal goal on energy, with five targets pertaining to access, efficiency, renewables and means of implementation. Goal 7 represents a significant milestone, especially since the Millennium Development Goals, adopted in 2000, did not include an energy goal. For the first time, energy is being recognized as a core part of the global sustainable development agenda of the United Nations system.

5. Energy is inextricably interlinked to many Sustainable Development Goals, including poverty eradication, food security, clean water and sanitation, health, education, prosperity, job creation and the empowerment of youth and women. Access to affordable, reliable, sustainable and modern energy for all is fundamental to human development. A shift towards sustainable energy solutions is also essential to the achievement of the Paris Agreement under the United Nations Framework Convention on Climate Change.

6. The ambitious 2030 Agenda, including the goal and targets on energy, contains a call for an equally ambitious means of implementation to achieve sustainable development, including enabling environments, effective institutions, technology transfer, capacity-building, scaled-up financing and multi-stakeholder partnerships.

7. A robust, transparent and integrated follow-up and review framework is crucial for helping countries to implement the 2030 Agenda. To maximize and track global progress towards the goals and targets, the General Assembly adopted, in its resolution 71/313, the global indicator framework for the 2030 Agenda, developed by the Inter-Agency and Expert Group on Sustainable Development Goal Indicators, including indicators related to Goal 7 (see table below), as agreed upon by the Statistical Commission in its report of March 2017 (E/2017/24), subject to future refinements and improvements.

Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all

Targets	*Indicators*
7.1 By 2030, ensure universal access to affordable, reliable and modern energy services	7.1.1 Proportion of population with access to electricity
	7.1.2 Proportion of population with primary reliance on clean fuels and technology
7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	7.2.1 Renewable energy share in the total final energy consumption
7.3 By 2030, double the global rate of improvement in energy efficiency	7.3.1 Energy intensity measured in terms of primary energy and gross domestic product (GDP)
7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	7.a.1 International financial flows to developing countries in support of clean energy research and development and renewable energy production, including in hybrid systems
7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support	7.b.1 Investments in energy efficiency as a proportion of GDP and the amount of foreign direct investment in financial transfer for infrastructure and technology to sustainable development services

III. Progress towards ensuring access to affordable, reliable, sustainable and modern energy for all

8. This section presents an overview of the progress made towards achieving Sustainable Development Goal 7, based on the report *Sustainable Energy for All Global Tracking Framework: Progress towards Sustainable Energy 2017*, compiled by the World Bank and the International Energy Agency in collaboration with many other international organizations.

9. Leadership actions by Member States contributing to the achievement of Goal 7 are also highlighted, based on the input received by the Secretariat from Argentina, Austria, Azerbaijan, Belarus, Cuba, Germany, Guatemala, India, Italy, Mexico, Monaco, the Russian Federation, Saudi Arabia and Slovakia.

10. The section also presents an overview of actions taken by the United Nations system and other international organizations to support Member States as they deliver on the 2030 Agenda, particularly in support of Goal 7 targets and their means of implementation. Highlights of the contributions of each organization are included, including efforts to provide policy support, strengthen capacity-building, facilitate international cooperation, undertake advocacy, catalyse partnerships and support efforts by countries to develop strategies to finance their implementation of Goal 7.

A. Overview

11. While a significant number of countries around the world are demonstrating accelerated progress, the current pace of progress, on a global scale, still falls short of what is needed to meet the Goal 7 targets on energy access, renewable energy and energy efficiency by 2030.

Access to electricity

12. The share of the global population with access to electricity rose from 85.0 per cent in 2012 to 85.3 per cent in 2014, for an annual increase of 0.19 percentage points, much slower than the annual rate of 0.92 percentage points required to meet the universal access to electricity objective by 2030.

13. The global access deficit, which is the number of people without electricity worldwide, fell only slightly, from 1.063 billion in 2012 to 1.061 billion in 2014. In absolute terms, 86.5 million people per year gained access to electricity during this period.

14. Electricity access in urban areas increased faster than in rural areas, with 0.16 percentage points added to the urban access rate but only 0.05 percentage points to the rural access rate each year. The global urban access rate was 96.3 per cent in 2014, while the rural rate was 73.0 per cent.

15. All regions have made steady progress towards universal access to electricity except Africa, where just under 50 per cent of the population had access to electricity in 2014. The Asia-Pacific region had the second-lowest access rate, with 90.3 per cent electrification in 2014 and 421.4 million people without access. The Arab region ranked just slightly ahead, at 90.4 per cent, although its population without access was much smaller, numbering 35.8 million. The Latin America and Caribbean region reached 97 per cent access, the closest to universal access after the region encompassing Europe, North America and Central Asia.

16. Africa is the only region where electrification progress falls short of demographic growth, and the pace needs to accelerate more drastically if the continent is to reach universal access by 2030. All other regions are making progress towards universal electrification, although closing the final electricity access gap is posing considerable challenges in all regions.

Access to clean fuels and technology

17. The share of the global population with access to clean cooking fuels and technology edged up from 56.5 per cent in 2012 to 57.4 per cent in 2014. Yet, 3.04 billion people in the world still did not have access to clean cooking in 2014.

18. Africa, with 850.3 million people lacking access to clean fuels and technologies for cooking in 2014, had the lowest access rate among all the regions. The Asia-Pacific region also lagged far behind: almost half of its population, 2.1 billion, had no access to clean cooking in 2014. The continent's total population grew 3.5 times faster than its population with access to clean cooking in the period 2012-2014. Efforts by the Asia-Pacific region in the period 2012-2014 were much stronger, with access growing by 0.8 percentage points and the increase in access outpacing the increase in population. In the Arab region and in Latin America and the Caribbean, progress slowed over the past few recent years as both regions approached universal access, with diminishing returns constraining further expansion efforts.

Renewable energy

19. The share of renewable energy in total final energy consumption worldwide increased from 17.91 per cent in 2012 to 18.33 per cent in 2014, reflecting an increase of 0.21 percentage points in each of those two years. This is far below the 0.92 percentage points required annually to double the share of renewable energy in the global energy mix by 2030.

20. The growth in renewable energy consumption during the period 2012-2014 came disproportionately from two energy end-use sectors, electricity and transport; renewable energy consumption in the heat sector grew at a significantly slower rate. This is a major concern, given that heat is the largest of the energy end uses, as well as the most challenging to decarbonize.

21. Among the various renewable energy technologies, solar photovoltaics and wind utilized for electricity generation experienced by far the most rapid growth rates, more than doubling during the period 2012-2014.

22. Modern renewable energy sources, excluding traditional biomass, are increasingly attracting attention in terms of policy. Between 1990 and 2014, Latin America and the Caribbean had, by far, the largest proportion of modern renewable energy consumption as part of its total energy consumption, reaching 22.9 per cent in 2014. As a group, Europe, North America and Central Asia ranked second, rising to 11.1 per cent in 2014 as a result of aggressive modern renewable energy policies and targets. Africa, at 8.1 per cent, and the Asia-Pacific region, at 6.8 per cent, also achieved strong growth in 2014. The Arab region finished 2014 with the lowest share, a mere 1.8 per cent, continuing its steady decline since 1990.

23. Traditional biomass continued to overshadow other sources of renewable energy in Africa and the Asia-Pacific region. In Africa, traditional renewable energy represented over 85 per cent of renewable energy consumption in 2014. In the Asia-Pacific region, that share was 63.1 per cent.

Energy efficiency

24. Global primary energy intensity continued to show improvement. During the period 2012-2014, it declined at an average rate of 2.1 per cent per year globally. Still, this falls short of the rate of 2.8 per cent per year needed to achieve target 7.3, on energy efficiency, by 2030.

25. Globally, improvements resulted in a reduction in energy consumption by nearly 12 exajoules in the period 2012-2014, equivalent to the combined final energy consumption of Brazil and Pakistan in 2014.

26. Policies on industry, transport and buildings have been key drivers of those reductions in energy intensity. The amount of total final energy consumption worldwide covered by mandatory energy efficiency policies grew from 11 per cent in 2000 to 29 per cent in 2014. Most of the savings came from the industrial and transport sectors, particularly in China, India and Nigeria.

27. Europe, North America and Central Asia have all decoupled energy demand growth from gross domestic product (GDP) growth. The Asia-Pacific and Latin America and Caribbean regions both achieved decoupling in the early 1990s, and Africa did so in the early 2000s, although absolute energy consumption continued to grow, reflecting relatively low per capita energy consumption. In the Arab region, the decoupling of energy demand from GDP has been a growing trend.

Investment

28. The International Energy Agency estimates that, to achieve universal electricity access and clean cooking solutions, investments of $45 billion per year would be needed, compared with actual investment flows estimated at $9 billion per year.

29. Renewable energy investments averaged $283 billion per year during the period 2010-2015, according to the International Energy Agency. Doubling the global share of renewable energy could cost an average of $770 billion per year, according to an estimate by the International Renewable Energy Agency.[1]

30. The global investment in energy efficiency grew to $221 billion in 2015, according to the International Energy Agency. To meet target 7.3 on energy efficiency, an estimated investment of $560 billion per year would be required globally, according to the second edition of the *Global Tracking Framework*, issued in 2015.

B. Member States

Argentina

31. Argentina is committed to the development of public policies aimed at ensuring access to affordable, sustainable and modern energy, promoting energy efficiency, developing adequate low-carbon infrastructure and reducing inefficient fossil fuel subsidies in line with the global agreements achieved in recent years, namely, the 2030 Agenda for Sustainable Development, the Paris Agreement, the Addis Ababa Action Agenda of the Third International Conference on Financing for Development and the action plan on climate and energy for growth issued by the Group of 20 at its summit held in Hamburg, Germany, in July 2017. Advancing the implementation of the country's national determined contribution plays a critical role in scaling up sustainable energy solutions.

Austria

32. Austria is increasing energy access, renewable energy and energy efficiency in partnership with various stakeholders. The Global Network of Regional Sustainable Energy Centres, jointly facilitated by Austria and the United Nations Industrial Development Organization (UNIDO), contributes to increased regional cooperation and capacities in renewable energy and energy efficiency investments, markets and industries in West Africa, sub-Saharan Africa, the Caribbean, the Pacific and other regions. In cooperation with UNIDO and the United Nations Environment Programme (UNEP), a network of national cleaner production centres develop pilot preventive environmental strategies in key developing and middle-income countries.

33. In May 2017, the Vienna Energy Forum brought together over 1,700 partners under the theme of "Sustainable energy for the implementation of the Sustainable Development Goals and the Paris Agreement", highlighting energy innovation and its nexus with other development issues.

34. Austria supports Sustainable Energy for All, a quasi-international organization established and governed according to Austrian law as a special type of international non-governmental organization with certain fiscal and labour-related privileges. The organization forms an integral part of the Vienna energy hub.

[1] International Renewable Energy Agency, *REmap: Road Map for a Renewable Energy Future*, 2016 edition (Abu Dhabi).

Azerbaijan

35. Azerbaijan is making strides in the area of renewable energy. At present, about 17.6 per cent of its power generation is based on alternative and renewable energy sources: 1,157 MW from hydroelectric power, 32 MW from solar power, 66 MW from wind power and 38 MW from biomass and waste. The country intends to reach 20 per cent by 2020, 25 per cent by 2025 and, eventually, 50 per cent by 2050. Since 2009, 10 new hydroelectric power plants, 6 wind power plants and 5 solar power plants have been built, while solar panels and heating pumps have been installed at 30 social facilities in various regions of the country by State and private enterprises. Azerbaijan has also declared, as a voluntary target, its intention to reduce carbon emissions by 35 per cent by 2030 as compared with its 1990 levels. The action plan contained in the country's strategic road map forecasts the creation of 420 MW in new generating capacity from renewable sources by 2020 and the creation of 270 new jobs.

Belarus

36. Belarus is committed to increasing the share of its renewable energy sources through the implementation of energy technologies, including solar energy, wind energy, hydropower, biomass and thermal energy. The national strategy for sustainable socioeconomic development for the period up to 2030 is aimed at increasing the share of primary energy production from renewable energy sources in the energy mix to 6 per cent by 2020, 7 per cent by 2025 and 8 per cent by 2030. In 2016, a preliminary estimate of that share was 5.9 per cent. In the period 2015-2016, Belarus installed facilities with capacity for 113 MW from renewable energy, exceeding the total capacity of the power plants built in the previous 20 years.

Cuba

37. Cuba is committed to contributing to the achievement of the Sustainable Development Goals, in particular Goal 7. Cuba has achieved the high electricity access rate of 99.5 per cent. There is an ongoing programme to provide electricity to some 20,000 households in remote areas. One of the country's key policy objectives is to increase the proportion of renewable energy sources in the country's electricity production mix to 24 per cent by 2030, thereby contributing to the generation of 7,245 GWh per year from renewable energy sources, which would replace the 1.7 million tons of fossil fuels consumed annually, in addition to cutting carbon dioxide emissions by over 6 million tons per year.

38. With regard to renewable energy, the goal is to install 2,144 MW in new electric power capacity through the construction of 19 biomass power plants, 13 wind farms, several solar photovoltaic farms and 74 small hydroelectric power plants. With respect to energy efficiency, measures include the replacement of fluorescent lamps with LED lighting in the residential sector (buildings), the improvement of cookstoves in the residential sector, the installation of new LED street lighting systems, the installation of solar heating systems, the introduction of more efficient technologies and the use of less-polluting energy sources, such as natural gas and liquefied petroleum gas.

39. Cuba ratified the Paris Agreement on 28 December 2016 and has recently adopted a national climate action plan, which includes a programme of progressive investments in the short (2020), medium (2030), long (2050) and very long (2100) terms.

Germany

40. The national energy transition project of Germany, Energiewende, can be regarded as the country's contribution to the decarbonization of the world economy. Within the framework of the Energiewende project, Germany has set itself very ambitious targets, such as abandoning nuclear power by 2022, increasing the share of renewable energies in its electricity supply to 80 per cent by 2050 and decreasing greenhouse gas emissions by 80 to 90 per cent by 2050 (compared with 1990). At the time of reporting, the share of nuclear power in the country's electricity mix had decreased to about 13 per cent, approximately 33 per cent of electricity production in Germany stemmed from renewable sources, and, by 2015, emissions had shrunk by 27 per cent over 1990 levels.

41. In its international cooperation efforts, Germany places priority on the achievement of Sustainable Development Goal 7. Those efforts include support for the Group of Seven, the Group of 20, the International Renewable Energy Agency, the Sustainable Energy for All organization, the Clean Energy Ministerial forum, the Africa-European Union Energy Partnership, the multi-stakeholder Renewable Energy Policy Network for the 21st Century and its International Renewable Energy Conferences, the International Energy Agency, the Energizing Development Partnership, the African-led Africa Renewable Energy Initiative and the European Union Energy Initiative Partnership Dialogue Facility.

Guatemala

42. From 2011 to 2016, Guatemala increased the volume of electricity it generated from renewable sources from 8,147 GWh to 10,878 GWh, accounting for some 60 per cent of its total production. While hydropower represents around a third of overall renewable energy, the share of thermal and biomass energy, among other sources, is growing rapidly. Guatemala is also making progress on energy access. In 2016, access to electricity climbed to 92 per cent, compared with 84 per cent in 2011.

India

43. At the time of reporting, India still had an estimated 240 million people lacking access to electricity, with 74 per cent of rural households having been electrified. The Government aims to provide a reliable supply of electricity 24 hours a day, 7 days a week, to its citizens by 2022. It also intends to electrify all of its census villages by 2019. The Government has a major target of ensuring a universal supply of clean cooking fuel for urban and rural households and has made significant progress in that direction.

44. India is making ambitious efforts to achieve its renewable energy targets. It is committed to generating 40 per cent of its cumulative electric power installed capacity from non-fossil-based energy sources by 2030. The country has set for itself a target of 175 GW in renewable energy (grid-connected) by 2022.

45. Energy efficiency policies in India are growing in scope and importance. The country is working to develop an energy efficiency index to rank its states on the basis of energy efficiency. Various innovative demand-side policy measures are also being considered to promote the efficient use of energy. India is implementing the world's largest LED distribution programme, aimed at promoting the efficient use of energy at the residential level. Over 230 million LED bulbs have already been distributed under the programme, with a total of 770 million inefficient bulbs expected to be replaced by 2019. In addition, a national street light programme is

being implemented to replace 35 million conventional street lights with LED lighting.

46. The recent ratification by India of the Paris Agreement underlined the country's commitment to ensuring a growing role for low-carbon sources of energy, led by solar and wind power. The intended nationally determined contributions of India include the twin energy-related commitments to increasing the share of non-fossil fuel power generation capacity to 40 per cent by 2030, aided by technology transfer and low-cost international finance, and to reducing the emissions intensi8y of its economy by 33 to 35 per cent, measured against a 2005 baseline.

Italy

47. Italy recognizes the catalytic role of energy in promoting sustainable development. Renewable energy is at the core of its energy policy. Renewables represent around 41.6 per cent of total national energy production, with an installed capacity of around 52.4 GW, mostly from small and medium-sized power plants. In 2016, renewable sources in Italy represented about a third of its overall electricity consumption. With over 700,000 plants generating electricity from renewable sources, Italy has already exceeded the European target for 2020, covering 17.6 per cent of its gross final consumption, electrical, thermal and transport-related, with renewable sources. Renewable energy has also created a significant number of jobs, with an estimated 35,000 new positions in 2016.

48. Italy also plays a leading role in energy efficiency measures, with approximately 1 per cent of its GDP invested in environmental sustainability, placing it among the most progressive countries in the world regarding energy efficiency.

49. At the international level, Italy is financing energy access projects in Africa, the Middle East and Latin America, for example, through bilateral, multilateral and multi-stakeholder-based cooperation initiatives such as the Italy-Africa Initiative, the Africa-European Union Energy Partnership, Renewable Energy Solutions for the Mediterranean and the Sustainable Energy for All initiative.

Mexico

50. Mexico is committed to the achievement of the 2030 Agenda for Sustainable Development and has developed specific measures to achieve the targets on renewable energy, energy efficiency and universal access to modern energy services. Those measures include producing 35 per cent of its electricity using clean energy sources by 2024; reducing the intensity of its final energy consumption by 1.9 per cent per year during the period 2016-2030; achieving 99.8 per cent electrification in the country, thereby benefiting about 1.8 million people by 2024; at least doubling government investment in innovation and technological development for clean energy by 2020; and reaching the regional goal for Canada, the United States and Mexico, with 50 per cent of its electricity generation coming from clean energy by 2025.

51. To achieve universal energy access, the country has established a universal electric service fund to finance electrification in rural and marginalized urban areas, with funding coming from the surplus revenue realized from the wholesale electricity market, the national energy centre and third-party donations.

52. With respect to clean and renewable energy technologies, Mexico has put in place a variety of measures. Its programme for the development of the national electric system for the period 2016-2030 is aimed at ensuring that 63 per cent of

new infrastructure for electricity generation in the country within the next 15 years utilizes clean energy sources. Mexico also participates in the Mission Innovation initiative, the aim of which is to ensure that clean energy is affordable for everyone.

53. Mexico has made progress in promoting energy efficiency in buildings, vehicles and industrial facilities. Its large-scale green credit line for businesses has benefited some 5,000 medium-sized, small and microenterprises through financing to replace air-conditioning equipment, refrigeration and lighting, thereby cutting carbon dioxide emissions by approximately 13,000 tons.

Monaco

54. Monaco established its energy transition programme in 2016, with the main goal of promoting renewable energy and energy efficiency and reducing greenhouse gas emissions by 50 per cent by 2030 compared with the baseline year of 1990. Its white paper on energy transition outlines measures for mobilizing all relevant actors for action and is expected to lead to a national agreement on energy transition, involving public institutions and private actors, with the aim of promoting, inter alia, energy audits for buildings, smart electricity meters, productive lighting systems and car-free days.

Russian Federation

55. The Russian Federation supports the implementation of the 2030 Agenda for Sustainable Development. It is taking measures to balance traditional development and expand the use of renewable energy sources, with an emphasis on energy efficiency and the introduction of advanced technologies. The revised version of the country's energy strategy, the goal of which remains to provide stable fuel and energy resources for the period up to 2035, is about to be finalized.

56. The Russian Federation is actively cooperating on energy access and advanced energy technology projects with countries in Europe, Asia, Africa and the Americas. This includes the construction of gas pipelines, nuclear and hydroelectric power plants, liquefied natural gas facilities and infrastructure for electricity exports, through more than 50 international projects.

57. Energy efficiency continues to be an important priority for the Russian Federation. From 2011 to 2014, the total volume of financial support provided under the State's energy efficiency and development programme was almost $700 million. The programme has played a catalytic role in mobilizing private investments. The Russian Federation is also actively working to increase energy efficiency in terms of the use of gas.

58. With regard to renewable energy, the Russian Federation remains one of the leaders in hydroelectric power, which accounts for about 17 per cent of the country's electricity production. Efforts are under way to promote wind power and to improve research and development on solar power systems.

Saudi Arabia

59. Saudi Arabia recognizes that energy lies at the heart of a thriving society, driving it to achieve greater productivity and prosperity, and underscores the importance of integrating the three dimensions of sustainable development, environmental, social and economic, in order to advance to more sustainable energy systems. Saudi Arabia also highlights the role of technology, inclusiveness and flexibility, especially with regard to sources of energy, in achieving that transition.

Slovakia

60. From an energy security point of view, securing a sustainable and affordable supply of all kinds of energy is a priority for Slovakia. With its high dependence on a single energy supplier, Slovakia supports the building of a secure and competitive "European energy union" with a forward-looking climate policy. The country's energy policy, approved in 2014, is aimed at developing a competitive low-carbon energy system that would provide a secure, reliable and efficient supply of all forms of energy at affordable prices, taking into account consumer protection and sustainable development. Several priorities have been identified to enhance energy security, improve energy efficiency, ensure competitiveness and ensure that energy policies are in accordance with the principles of sustainable development.

C. United Nations system and international organizations

European Union

61. The European Union and its member States attach great importance to the issue of achieving clean, affordable, reliable and modern energy for all. As one of the partnerships under the Joint Africa-European Union Strategy, the Africa-European Union Energy Partnership is a long-term framework for strategic dialogue between Africa and the European Union with the objectives of sharing knowledge, setting political priorities and developing joint programmes on the key energy issues and challenges of the twenty-first century. The aim of the Partnership is to improve access to secure, affordable and sustainable energy on both continents. Through high-level conferences, technical workshops and dialogues with business, civil society and academia, the Partnership facilitates dialogue between stakeholders and promotes joint action. It has also provided an essential basis for better coordination and harmonization through its mapping of existing initiatives and programmes in Africa.

Food and Agriculture Organization of the United Nations

62. Building on its multi-partner programme, entitled "Energy-smart food for people and climate", the Food and Agriculture Organization of the United Nations (FAO) continues to assist Member States in making the shift to energy-smart agrifood systems, including through the development of a methodology to access the water-energy-food nexus at both the territorial and the intervention levels, the development of a cost-benefit analysis regarding the introduction of renewable energy in selected agrifood chains and the introduction of solar-powered refrigerators and freezers in small fishing communities in Côte d'Ivoire and Guinea-Bissau. With regard to improving access to safe and sustainable energy in emergency and rehabilitation settings, support has been provided to Chad, Kenya, Myanmar, Nigeria, Somalia, South Sudan and Uganda.

International Fund for Agricultural Development

63. The International Fund for Agricultural Development (IFAD) emphasizes income generation by linking access to clean energy to agriculture-related activities. IFAD has developed country- and technology-specific pilot approaches, such as those relating to micro-hydropower in Nepal, jatropha biofuel in Mali, a solar-powered drip irrigation system project in northern Benin and the Adaptation for Smallholder Agriculture Programme, which provides grants to facilitate the use of solar energy along the value chain, from production to storage and processing.

International Renewable Energy Agency

64. The International Renewable Energy Agency is a global, treaty-based intergovernmental organization that promotes the widespread adoption and sustainable use of all forms of renewable energy. The Agency serves as a centre of excellence for knowledge and innovation, a source of advice for its 150 member countries, a global voice for renewable energy and a network hub for developing collaborative partnerships. The annual meeting of its Assembly provides a unique platform for interaction between policymakers and key stakeholders on issues of common interest in the light of the adoption of the Sustainable Development Goals, the entry into force of the Paris Agreement and efforts by countries to decarbonize and transform their energy systems.

Office of the United Nations High Commissioner for Refugees

65. The Office of the United Nations High Commissioner for Refugees (UNHCR) is committed to addressing the energy needs of refugees, improving access to sustainable fuel, providing a power supply to health centres and utilizing solar-powered lighting. A global strategy for safe access to fuels and energy, launched by UNHCR in 2014, offers crucial guidance and details innovative approaches and technologies, including clean or fuel-efficient cookstoves, alternative and sustainable fuels and solar-powered lighting. In addition, UNHCR has implemented a variety of energy projects to deliver sustainable energy in conflict settings, including a wind power project to support clean energy and reintegration in Bamyan, Afghanistan, and the Brighter Lives for Refugees campaign, in cooperation with the IKEA Foundation, to improve access to cleaner, renewable, sustainable and user-friendly energy supplies for refugees.

United Nations Capital Development Fund

66. The United Nations Capital Development Fund, through its Clean Start programme, supports households and micro-entrepreneurs through microfinance service providers, with the goal of investing $26 million in six countries in Asia and Africa and enabling over 2.5 million people to benefit from cleaner, more efficient energy by 2020.

United Nations Children's Fund

67. The United Nations Children's Fund (UNICEF) is applying sustainable energy solutions in its country office programmes of cooperation and is in the process of exploring possibilities for scaling up its involvement and investments in that area. Such initiatives include the provision of improved cookstoves in Bangladesh, Project Lumière in Burundi and "youth kiosks" and "MobiStations" in Uganda. In 2016, UNICEF released a global report on air pollution, *Clear the Air for Children: The Impact of Air Pollution on Children*.

United Nations Conference on Trade and Development

68. The energy commodity development programme of the United Nations Conference on Trade and Development focuses on reducing information asymmetry for increased energy access and efficiency, promoting natural gas in the global energy mix, increasing local participation to reduce energy poverty, negotiating contracts for improved access to energy services, mitigating the impact of energy price volatility for universal access to energy, and developing and promoting trade, competition and investment policy for energy development.

Department of Economic and Social Affairs

69. The Department of Economic and Social Affairs, in its role as the secretariat for the high-level political forum on sustainable development, the central platform within the United Nations system for the follow-up and review of the 2030 Agenda for Sustainable Development, continues to provide support for the coordination and implementation of planned activities for the United Nations Decade of Sustainable Energy for All. As the secretariat of UN-Energy, the Department also plays an important role in coordinating and implementing energy-related activities among United Nations organizations.

70. In cooperation with other United Nations organizations, the Department has coordinated a series of workshops and meetings on the topic of energy, including an expert group meeting on the theme "Sustainable Development Goal 7 and its role in mitigating impacts from climate change", held in Marrakech, Morocco, in November 2016, on the margins of the twenty-second session of the Conference of the Parties to the United Nations Framework Convention on Climate Change, and a symposium on the theme "Progress on Goal 7 and its interlinkages with other Sustainable Development Goals", held in Bangkok in June 2017, jointly organized with the Economic and Social Commission for Asia and the Pacific. A series of symposiums and meetings have also been planned, to be held in Asia, Europe, Latin America and Africa in 2017 and 2018.

71. The Department implements a partnership programme, entitled "Powering the future we want: recognizing leadership and innovative practices in energy for sustainable development", offering a grant in the amount of $1 million to fund future capacity development activities in relation to energy for sustainable development. The programme is being implemented for an initial period of five years, from 2015 until 2019. The Department is also leading a public-private partnership on minimum electricity access that promotes electrification in rural isolated communities with stand-alone renewable energy systems.

United Nations Development Programme

72. With the aim of ensuring universal access to affordable, reliable and modern energy services, the United Nations Development Programme (UNDP) works with countries to make energy systems and usage more efficient. It also works to increase the global share of renewable energy. Specifically, UNDP helps countries to meet energy needs from the perspective of affordability, reliability and sustainability; supports the development of on- and off-grid renewable energy technologies and delivery services; supports national and local governments in designing and adopting efficient policies and legislation and helps them with integrated solutions that tackle energy efficiency in disaster risk reduction and recovery processes; and supports sustainable cities, including through integrated solutions that combine renewable energy and efficiency measures with other aspects of urban design, such as sustainable mobility, transport and waste management.

Economic and Social Commission for Asia and the Pacific

73. The Asia Pacific Energy Portal is one aspect of the support provided by the Economic and Social Commission for Asia and the Pacific (ESCAP) to regional member States under the Asian and Pacific Energy Forum. The portal is an innovative platform that combines nearly 200 statistical indicators and over 2,000 policy documents for ESCAP member States, offering a comprehensive view of the region's energy dynamics. ESCAP also implements a multi-year project to widen access to modern energy services for rural communities through its Pro-Poor Public-Private Partnership, with pilot projects in the Lao People's Democratic Republic and

Nepal. ESCAP took up the theme of access to electricity at the first session of its Committee on Energy, held in Bangkok in January 2017. The second Asian and Pacific Energy Forum will be held in Tonga in 2018.

Economic and Social Commission for Western Asia

74. The Economic and Social Commission for Western Asia (ESCWA) has been coordinating with the relevant ministries and authorities of member States in addressing and responding to regional energy challenges. Through the implementation of a project aimed at building capacities in the development of appropriate green technologies for improving the livelihood of rural communities, ESCWA supports the dissemination of green energy technologies in rural areas, strengthens the capacities of public sector institutions and facilitates knowledge-sharing. ESCWA is finalizing a regional report on tracking progress made in achieving Sustainable Development Goal 7, which will provide an overview of the progress made in the area of energy in the Arab region over the past two decades. A variety of documents and reports, as well as workshops and events, have been developed and organized to strengthen capacity-building for ESCWA member countries on the topic of energy.

Economic Commission for Africa

75. The Economic Commission for Africa (ECA) has continued to provide support to member States and regional economic communities in adopting clean energy technologies and policies with a view to achieving sustainable energy for all. ECA undertook a continent-wide initiative to strengthen the capacity of African countries to promote the use of renewable energy in order to achieve sustainable development and poverty reduction. The project looked at the potential of bioenergy and of policies in support of its development in the African context, with particular emphasis on liquid biofuels, owing to their far-reaching positive effects. The ECA publication *Enhancing Domestic Private Sector Development in Africa: A Focus on Renewable Energy* explored how Governments in Africa can effectively employ interventionist industrial policy to increase private entrepreneurship and stimulate domestic production, especially in sectors such as construction and energy.

Economic Commission for Europe

76. The Economic Commission for Europe (ECE), through its Committee on Sustainable Energy and subsidiary bodies, implements and supports a variety of activities in the field of sustainable energy and its cross-cutting areas, including a project entitled "Pathways to sustainable energy", which is aimed at facilitating policy dialogues and exploring policy pathways, and a project entitled "Methane management in extractive industries", aimed at increasing the capacity of ECE member States to measure, report, verify and reduce methane emissions in key energy-related extractive industries. ECE is also advancing the development, dissemination and maintenance of the United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources, a global classification system for energy and mineral reserves and resources. In 2017, the Commission's Group of Experts on Renewable Energy prepared a "Renewable energy status report", in close collaboration with the Renewable Energy Policy Network for the 21st Century, providing a comprehensive overview of the current status of renewable energy and energy efficiency trends in 17 selected countries.

Economic Commission for Latin America and the Caribbean

77. The Economic Commission for Latin America and the Caribbean (ECLAC) implemented a project entitled "Sustainable energy in the Caribbean: reducing the

carbon footprint in the Caribbean through the promotion of energy efficiency and the use of renewable energy technologies" during the period 2014-2016, with the overall objective of strengthening the capacity of Caribbean countries in the areas of energy efficiency and renewable energy. ECLAC also organized a regional workshop entitled "Sustainable development agendas: how energy and emission accounting can contribute to policy design and decision-making". Jointly organized by the Statistics Division and the World Bank-led global partnership Wealth Accounting and the Valuation of Ecosystem Services, the workshop contributed to the dialogue on energy-related country and regional development agendas.

United Nations Educational, Scientific and Cultural Organization

78. The United Nations Educational, Scientific and Cultural Organization (UNESCO) continues its efforts to promote energy-related policies and strategies, strengthen education and capacity-building and share best practices, including through a project concerning the solar-powered electrification of 75 rural schools in Benin, Madagascar, Mauritania, the Niger and Togo, benefiting approximately 600 teachers and 24,600 schoolchildren.

United Nations Environment Programme

79. The work of the United Nations Environment Programme (UNEP) on energy is aimed at supporting countries in improving energy efficiency and increasing the use of renewable energy as part of their efforts to achieve low-carbon and climate-resilient development pathways. UNEP provided support for six East African countries in exploring their potential for geothermal energy, enabled the installation of 3 million square metres of solar water heating panels in five countries and helped eight countries to access technologies related to renewable energy and energy efficiency. UNEP also supports an electricity consumption reduction project in Morocco, which is expected to cut carbon dioxide emissions by more than 4 million tons by 2022 and significantly reduce energy costs for thousands of people. UNEP hosts the Copenhagen Centre on Energy Efficiency, a thematic hub for energy efficiency, as part of the Sustainable Energy for All initiative and as a satellite of the Centre on Energy, Climate and Sustainable Development. Both Centres are operated jointly with the Technical University of Denmark under the UNEP DTU Partnership.

United Nations Framework Convention on Climate Change

80. With the adoption and rapid entry into force of the Paris Agreement, the United Nations Framework Convention on Climate Change secretariat continues to provide support to developing countries so as to facilitate their transition to a sustainable energy future, including through support for the technical examination of policy options with high mitigation potential and adaptation, health and sustainable development co-benefits.

United Nations Human Settlements Programme

81. The strategic approach of the United Nations Human Settlements Programme (UN-Habitat) focuses on urban energy planning, municipal energy policy and legislation and urban energy finance; energy access for the urban poor, with a special emphasis on women and youth; energy and resource efficiency in the built environment; and renewable energy technologies in the urban energy mix.

United Nations Industrial Development Organization

82. The energy-related programme portfolio of the United Nations Industrial Development Organization (UNIDO) focuses primarily on the promotion of energy

efficiency policies, technologies and practices, as well as renewable sources of energy for the facilitation of productive activities, with a special focus on rural areas and industrial processes. In addition, UNIDO assists individual countries in reviewing both their energy policies and the institutional and regulatory frameworks of their energy sectors, while linking those policies and frameworks to their capacities to develop and disseminate renewable energy techniques and related industrial applications. UNIDO also champions the Global Network of Regional Sustainable Energy Centres and co-organizes the Vienna Energy Forum, a leading global event on climate change issues held every other year since 2009. In 2017, the theme of the forum was "Sustainable energy for the implementation of the Sustainable Development Goals and the Paris Agreement".

United Nations Institute for Training and Research

83. The United Nations Institute for Training and Research plays a lead role in the roll-out of the Sustainable Development Goals through the provision of training, awareness-raising and materials for diplomats from developing countries, as well as for key officials from all Member States, across all branches of Government. Training and support in relation to the achievement of Goal 7 is made available through both e-learning and face-to-face events.

World Bank Group

84. The engagement of the World Bank Group in the energy sector is designed to help countries secure the affordable, reliable and sustainable energy supply needed to end extreme poverty and promote shared prosperity. In 2016, the Group's financing in the energy sector totalled $11.5 billion, including about $2.9 billion for renewable energy and energy efficiency projects. Programmes supported by the Group include a solar park in Jordan that is the largest private sector-led solar power initiative in the Middle East and North Africa, a national electrification plan in Myanmar that will create 7.2 million new household connections over the next 15 years and a project known as "Lighting Africa" aimed at reaching 250 million more people by 2030. Jointly prepared by the World Bank and the International Energy Agency, the third edition of the *Global Tracking Framework* was released in April 2017. It provides a dashboard showing the world's progress towards the three sustainable energy objectives — energy access, energy efficiency and renewable energy — and features, for the first time, region-based chapters exploring subregional issues and challenges, with input from the five United Nations regional commissions.

World Health Organization

85. The World Health Organization (WHO) has produced indoor air quality guidelines on household fuel combustion and, in 2016, published a report on household air pollution, *Burning Opportunity: Clean Household Energy for Health, Sustainable Development and Well-being of Women and Children*. The organization's urban health initiative is aimed at strengthening capacity to use data on health as evidence to advocate and implement plans to improve energy access and energy efficiency in large urban areas of developing countries, with the aim of reducing air pollution.

World Meteorological Organization

86. The World Meteorological Organization facilitates the exchange of data that can help energy developers and managers better plan for changes in energy demand, the development of local energy systems and compliance with environmental requirements. The organization's Global Framework for Climate Services addresses

issues relating to user requirements for climate information and energy and identifies and addresses observational, research and projected production needs to improve climate services for the energy sector.

IV. Strengthening coordination and institutional support on energy in the context of the 2030 Agenda

87. The 2030 Agenda represents a paradigm shift with multiple implications for international cooperation that could effectively support global poverty eradication and sustainable development. With energy firmly embedded within the 2030 Agenda, any proposals on the strengthening, through existing arrangements, of both inter-agency and intergovernmental coordination and institutional support on energy issues should best be considered in that broad context.

88. In his 2017 report on repositioning the United Nations development system to deliver on the 2030 Agenda, with a focus on ensuring a better future for all (A/72/124), the Secretary-General identified several critical gaps in skill sets and capacities within the United Nations system, potential institutional measures to address them, ways to strengthen delivery at the country level and potential mechanisms to strengthen accountability in order to guide the support of the United Nations development system for the 2030 Agenda, including through improving oversight by Member States.

89. The Secretary-General's report also identified significant gaps in the thematic coverage of the Sustainable Development Goals in terms of expenditures and personnel within the United Nations system. Goal 7 ranked second-lowest of all the Goals in 2016 in terms of expenditure, at less than 1 per cent of overall expenditure on Goals within the system.[2]

90. On the ways to strengthen intergovernmental and interagency coordination, the following relevant input was received by the Secretariat from Austria, China, Turkey, the United Arab Emirates, the European Union, IFAD and the International Renewable Energy Agency:

(a) Austria emphasized the need for synergies and for avoiding duplication, including the importance of effectively leveraging existing networks, such as the Global Network of Regional Sustainable Energy Centres established by UNIDO, and of promoting coherence between the United Nations system and the non-governmental organization Sustainable Energy for All through its relationship agreement;

(b) China indicated the need for synergies across the global energy agenda and for the establishment of green and low-carbon global energy governance to promote global green development cooperation;

(c) Turkey stressed the need to strengthen coordination between international institutions and Governments, especially to improve the investment environment;

(d) The United Arab Emirates stressed the need for a much greater focus by the United Nations on energy access and clean cooking and heating, especially through renewable energy technologies, including enhanced United Nations capacity within country teams on policy reforms and financing facilitation. The country also stressed that, while there should be no new intergovernmental body on

[2] See Dalberg, "System-wide outline of the functions and capacities of the United Nations development system" (June 2017), available from www.un.org/ecosoc/sites/www.un.org.ecosoc/files/files/en/qcpr/sg-report-dalberg_unds-outline-of-functions-and-capacities-june-2017.pdf.

energy, UN-Energy should be strengthened to coordinate work among United Nations agencies, as well as with existing organizations such as the International Renewable Energy Agency, the International Energy Agency and Sustainable Energy for All. UN-Energy should be supported by a joint work programme. The strengthening of UN-Energy should include core funding for Secretariat staff, in order to ensure effective coordination and more equitable attention to and support for energy in the United Nations system;

(e) The European Union stressed that: (i) intergovernmental forums on energy already existed, including the International Energy Agency and the International Renewable Energy Agency; (ii) the high-level political forum played a central role in convening Member States to monitor progress on the entire 2030 Agenda, including Goal 7; (iii) UN-Energy must become a mechanism for enhanced inter-agency cooperation and coordination on Sustainable Development Goal 7; (iv) stronger cooperation was needed between the United Nations and relevant non-United Nations actors such as the International Renewable Energy Agency and Sustainable Energy for All; and (v) it was important to leverage existing mechanisms consistent with ongoing efforts on the quadrennial comprehensive policy review mandates;

(f) IFAD stressed the need for increased interministerial policy dialogue and cooperation on energy;

(g) The International Renewable Energy Agency reiterated its willingness to support United Nations efforts aimed at the implementation of Goal 7 and the 2030 Agenda, in particular in terms of renewable energy, and emphasized the role of the annual meeting of its Assembly as a unique platform for interaction between policymakers and key stakeholders.

V. Preparations for the high-level political forum in 2018

91. The first global review of Sustainable Development Goal 7 leading up to the high-level political forum in 2018 presents a unique opportunity to further the commitment to delivering on the Goal. Key priority actions to be undertaken within existing mandates and resources could include:

(a) Support for voluntary national reviews of the Sustainable Development Goals, including Goal 7 and its interlinkages with other Goals;

(b) Development of a comprehensive work programme and results framework for UN-Energy in support of Goal 7 implementation to strengthen coherence and coordination;

(c) Convening a preparatory event on Goal 7 in late 2017 in support of the global review at the high-level political forum in 2018, for which key United Nations and other intergovernmental organizations should be leveraged effectively, such as UNDP (capacity development), UNEP (its global energy efficiency summit), UNIDO (the Vienna Energy Forum), the International Renewable Energy Agency (its Assembly), the International Energy Agency (global analysis), the regional commissions (regional forums on sustainable development), WHO (health impact) and the World Bank (access, finance and investment);

(d) Establishing a United Nations inter-agency task force to define and monitor specific interlinkage targets between energy and other Sustainable Development Goals, including those on education, water, health, food security and poverty. Such a task force could be coordinated through UN-Energy and include experts from agencies such as the Department of Economic and Social Affairs, FAO,

IFAD, WHO, UNEP, UNESCO, UNDP and UN-Habitat, the regional commissions and other intergovernmental organizations such as the International Renewable Energy Agency;

(e) Developing an in-depth global assessment on energy with a focus on the interlinkages between energy and other Sustainable Development Goals, with the aim being to present a comprehensive assessment of critical issues such as energy security, the availability of energy resources, innovative technologies and future energy scenarios. A synthesis for policymakers would be produced as advance material to provide input for the high-level political forum of 2018;

(f) Developing multi-stakeholder partnerships on interlinkages, building on the competencies of the United Nations development system and targeting least developed countries, landlocked developing countries, small island developing States and sub-Saharan Africa, through South-South, North-South and triangular partners. Such partnerships would be monitored and showcased through the United Nations partnerships for sustainable development platform.

VI. Conclusion and way forward

92. **In order to support Member States in their implementation of the 2030 Agenda for Sustainable Development, including Sustainable Development Goal 7, the United Nations development system must rise to the challenges posed in that regard. The first global review of Goal 7 leading up to the high-level political forum in 2018 presents a unique opportunity to define and implement effective innovative mechanisms, within existing arrangements and resources, to accelerate the implementation of global goals and targets pertaining to energy. Member States may wish to consider the measures and priority actions proposed in sections IV and V above in order to strengthen intergovernmental and inter-agency coordination with regard to energy in the context of advancing the 2030 Agenda.**